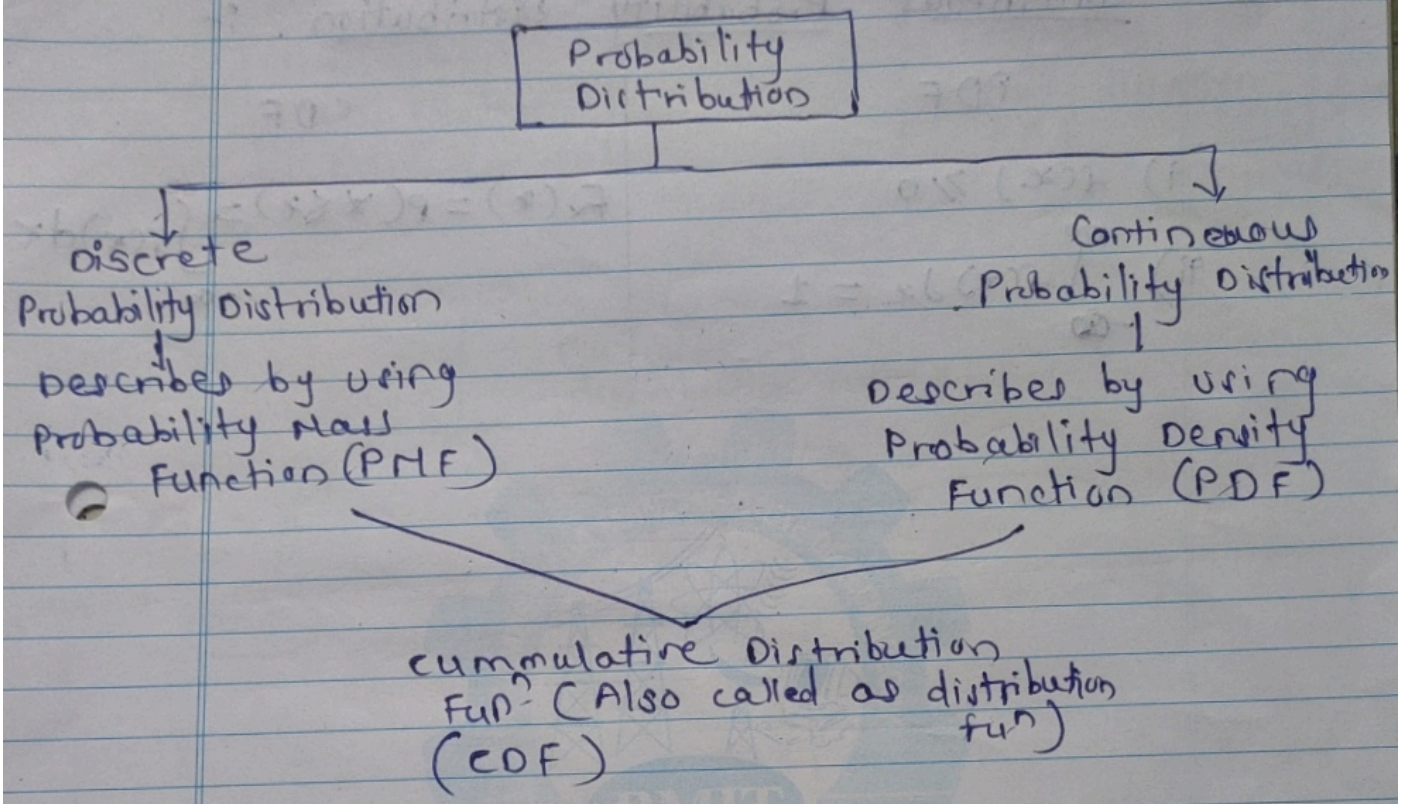
* PMF, PDF & CDF *



① Discrete Probability Distribution

PMF

$$\sum P(x) = 1$$

$$P(x) \geq 0$$

CDF

$$F(x) = \sum P_q = P(X \leq X_q)$$

(or)

$$F(x) = \sum_{x_q \leq x} P(X = x_q)$$

When we know PMF of X.

(2) Contineous Probability Distribution :-

PDF	CDF
i) $f(x) \geq 0$	$F_x(x) = P(X \leq x) = \int_{-\infty}^{\infty} f(x)\,dx$
ii) $\int_{-\infty}^{\infty} f(x)\,dx = 1$	

* Probability Distribution Function *

B.M.I.T.

* PMF, PDF & CDF *

Probability mass function PMF

Discrete distribution

Probability density function PDF

Continuous distribution

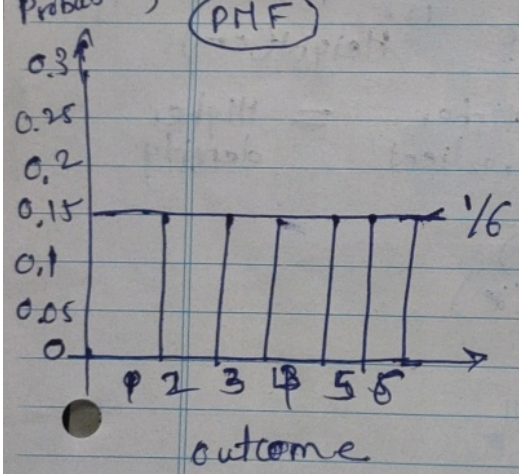
Cumulative distribution fun (CDF)

Eg

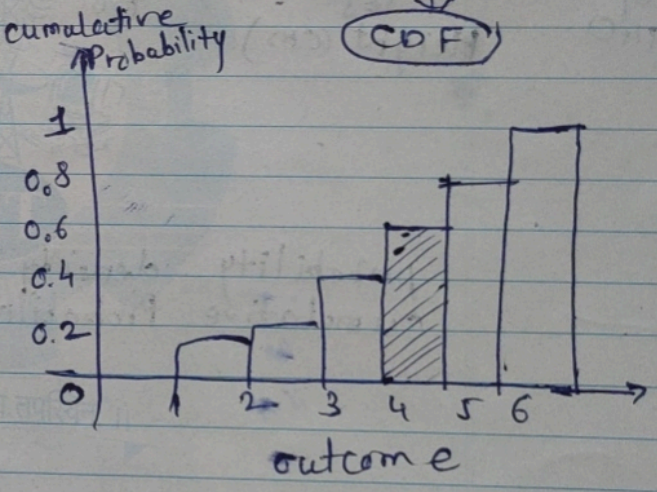
Dice

$x = \{1, 2, 3, 4, 5, 6\}$

PMF



CDF



$1/6 = 0.167$

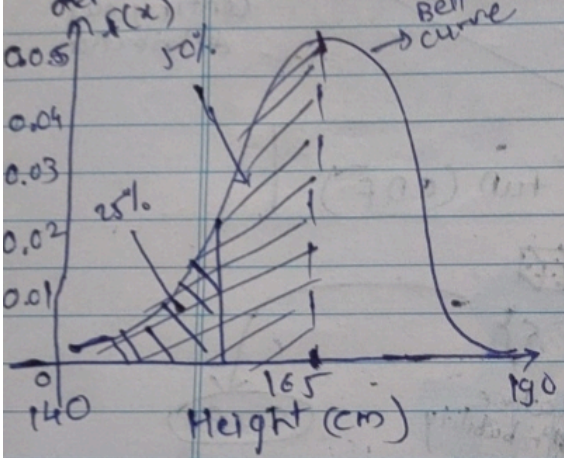
$P(X \leq 4) = P(X=1) + P(X=2) + P(X=3) + P(X=4)$

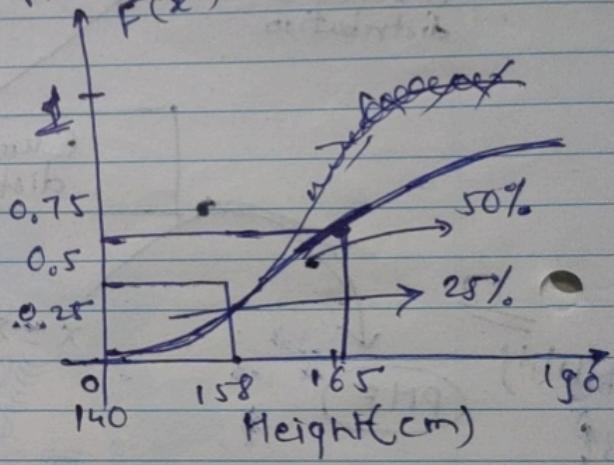
e.g

Height of women

PDF

CDF





Higher gradient = Higher density

probability density = $f(x)$

cumulative Probability = $F(x)$